REMARKS

The Examiner rejects claim 19 under 35 U.S.C. Section 112, first paragraph, as failing to comply with the written description requirement. The Examiner has rejected claim 19 on the grounds that

> the claim contains subject matter which is not described in the specification in such ways to enable one skilled in the art to which it pertains, or with which it is most merely connected, to make and/or use the invention. It is not known how the ratios are obtained, or how they are used to indicate an abnormality of the milk.

Claim 19 has been amended to read "wherein milk abnormality is detected through a comparison of ratios between sensor output signals obtained from milk extracted from an alternative extraction element or elements". One skilled in the art would be aware of various techniques which utilise a comparison of milk properties between the outer quarters of a dairy animal to indicate milk abnormality.

By way of example, the ratio of electrical conductivity values between outer quarters has been recognized as one of several possible methods for improving the estimate of mastitis status of quarters in cows (Hamann, J., & Zecconi, A. (1998 and *Evaluation of the electrical conductivity of milk as a mastitis indicator*, International Dairy Federation Bulletin, 334/1998).

The sensor apparatus as claimed in claim 19 allows for such techniques to be utilized in a novel and inventive way using the present invention.

The Examiner has rejected claims 14-16 under 35 U.S.C. Section 112, second paragraph, as failing to particularly point out and distinctly claim the subject matter for which the Applicant regards as the invention and also that there is insufficient antecedence basis for the limitation "the first extraction element".

The claim has been amended to read "wherein the extraction element or elements initially activated by a controller is selected randomly," to address the objection regarding antecedence.

Page 12, lines 17-20 of the present application read:

"Randomly selecting the first extraction element or elements to be activated can prevent the same teat and outer quarter being selected repeatedly in the same sequence and thereby prevent an offset or biased results being obtained."

One skilled in the art would recognize that the ability to randomize the selection of the extraction element is a significant advantage when obtaining an unbiased set of results.

The Examiner has rejected claim 15 as being indefinite and also holds that there is insufficient antecedence basis for the limitation "the pulsator valves" within the claims.

As claim 15 is dependent on claim 9, which has in turn been amended to be dependent on claim 4 there is now antecedence for the limitation "the pulsator valves".

Page 12, line 21 to page 13, line 7 discusses the advantages in partially activating extraction elements in order to "provide a massaging or stimulating effect to the other outer quarters". This allows those outer quarters which are not currently being milked to be provided "a heightened prestimulation effect to the cows udder prior to full, high flow rate milk extractions."

This argument equally applies to claim 16, and the Applicant trusts that this clarifies the subject matter which the Applicant regards as the invention.

The Examiner has rejected claims 1, 2, 4-7, and 9 under 35 U.S.C. Section 102(b) as being anticipated by Swanson, et al. (US 4,344,385).

Swanson, et al. disclose an independent quarter milking device having four teatcups with individual conduits connected from the milk cups to a manifold mounted on the stall structure. The milk from the manifold flows through a pipeline to a collection tank. Sensors are required in each individual conduit in order to detect the flow rate of each quarter.

This is contrary to the objectives of the current invention, which seeks to allow the use of a single sensor to detect a particular property of milk extracted from a plurality of extraction elements.

Claim 1, as presently amended, cites:

> A sensor apparatus adapted to be used with milk extraction machinery, the milk extraction machinery including a plurality of extraction elements which when activated are adapted to deliver extracted milk from two or more extraction elements into a single collection line, comprising:
> a sensor associated with the single collection line, wherein the sensor is adapted to detect a particular property of the milk extracted, and
> a controller adapted to control the activation of the extraction elements,
> whereby activation of the extraction elements is controlled to prevent the sensor being exposed to extracted milk supplied from all of the extraction elements at any one time.

The Applicant submits that Swanson, et al. do not disclose the use of a sensor associated with a single collection line into which a plurality of milk extraction elements deliver milk. Swanson, et al. disclose an independent quarter milking system whereby a plurality of

extraction elements deliver extracted milk to individual sensor apparatus associated with each delivery line before the conduits are connected together into a single collection line.

One skilled in the art would recognize that this is contrary to the objectives of the present invention which seeks to avoid the need for multiple sensors for individual milk extraction lines.

As claims 2, 4-7, and 9 are dependent on claim 1, the same argument is equally applicable.

Therefore, the Applicant submits that the invention as currently claimed is novel and inventive over Swanson, et al.

The Examiner has also rejected claims 1-3, 6-8 and 21 under 35 U.S.C. Section 102(a) as being anticipated by Van den Berg et al. (NL1020805). As the translation was not available to Applicant, Applicant has made reference to the equivalent US Patent No. 6886492 in formulating this response.

Van den Berg, et al. disclose a device for automatically milking an animal including at least two teatcups connected via individual teatcup lines to a common milk line for discharging milk being extracted from the teatcups. The device includes a common sensor disposed in the common milk line. Van den Berg, et al. disclose two embodiments in which:

a) there is no means for controlling the flow of milk into the common sensor. (In order to determine which teatcup the milk is extracted from, milk detection elements are included in each teatcup line.)

b) the apparatus includes a valve within each teatcup line to build up a buffer quantity of milk, therefore preventing milk flowing from multiple teatcups into the common sensor.

Van den Berg, et al. do not disclose a sensor apparatus whereby "activation of the extraction elements is controlled to prevent the sensor being exposed to extracted milk supplied from all of the extraction elements at any one time."

One skilled in the art should recognize that the device disclosed in Van den Berg, et al., for the control of milk flowing to the milk sensor is separate and distinct from the control of the extraction element.

Van den Berg, et al. describe a milking system as including teatcups, a milking line, and the teatcups being connected to the milking line by individual teatcup lines. In this way, it recognizes that the extraction element, that is the teatcup, is a separate integer to that of the delivery line to the common milk line.

Following this, it should be recognized that what is being controlled is not the extraction element but an additional integer in the form of a valve within the delivery line.

There is a disadvantage in the inclusion of this valve, in that it provides a point at which milk residue may accumulate - raising hygiene issues, or disrupting the flow of the milk as it passes by the valve.

One skilled in the art would recognize that disruption of the milk flow is highly disadvantageous as it deteriorates milk quality and increases the likelihood of air being trapped in the milk which also has an effect on the analysis of the milk sample by the sensor.

Therefore, the Applicant submits that the invention as currently claimed is novel and inventive over Van den Berg, et al.

As claims 2, 3 and 6-8 are dependant on claim 1 , the same arguments are equally applicable. Further, the arguments are also relevant to claim 21 as this claim is directed to a controller for the purposes of achieving the advantages discussed above.

The Examiner has rejected claims 1, 2, 4-7, 9-12, 15-16, 21 and 22 under 35 U.S.C. Section 102(b) as being anticipated by Nordegren, et al. (US401 1838).

Nordegren, et al. disclose a milking machine system for the variation of "working vacuum or massage vacuum", including a flow rate sensing device and a timing device.

Nordegren, et al. do not disclose a sensor apparatus comprising "a sensor associated with a single collection line, wherein the sensor is adapted to detect a particular property of the milk extracted." The sensor discussed within Nordegren, et al., is a milk flow indicator which monitors the milk flow within the lines.

One skilled within the art would recognize that such a sensor is not "adapted to detect a particular property of the milk extracted as claimed by the present invention. Rather it provides one of the parameters for deciding whether or not to increase or decrease the vacuum applied to the teatcups.

The Examiner also holds that Nordegren, et al. disclose a method whereby "activation of the extraction elements is controlled to prevent the sensor being exposed to extracted milk supplied from all the extraction elements at one time."

Nordegren, et al. only disclose the "sequential pulses of the massage vacuum to operate the teatcups sequentially" (abstract). One skilled in the art would recognize that the sequential extraction of single slugs of milk disclosed would not prevent the exposure of milk from all of

the extraction elements to the sensor apparatus, as the slugs would become mixed or cross-contaminate one another over the course of transportation.

The Applicant therefore submits that the present invention as claimed is novel and inventive over Nordegren, et al.

The Examiner further rejects Claim 13 under 35 U.S.C. Section 103(a) as being unpatentable over Nordegren, et al.; and Claims 17-20 under 35 USC Section 103(a) over Swanson, et al., in view of Fullam, et al. (U.S. 2006/0124064).

Applicant submits that independent claim 1 is novel and inventive over the cited art for the reasons discussed above.

The claims rejected under this section are currently dependent on claim 1.

Applicant submits that claim 1 being allowable, the dependent claims must also be allowable for the same reasons.

Based on the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

SHERIDAN ROSS P.C.

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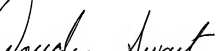
By: 

Douglas W. Swartz
Reg. No. 37,739
1560 Broadway, Suite 1200
Denver, Colorado 80202
Telephone: 303-863-9700